

# PATENT COOPERATION TREATY

# PCT

# 21 MAR 2007

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 429388002WO	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/US2005/004601	International filing date ( <i>day/month/year</i> ) 14 February 2005 (14.02.2005)	Priority date ( <i>day/month/year</i> ) 13 February 2004 (13.02.2004)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant NEOCIFIC, INC.			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 14 August 2006 (14.08.2006)
Facsimile No. +41 22 338 82 70	Authorized officer <div style="text-align: center; font-weight: bold;">Beate Giffo-Schmitt</div> e-mail: pt03@wipo.int

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
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**PCT**

REC'D 09 JUN 2005

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year)

07 JUN 2005

Applicant's or agent's file reference

429388002WO

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US05/04601

International filing date (day/month/year)

14 February 2005 (14.02.2005)

Priority date (day/month/year)

13 February 2004 (13.02.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): H04J 11/00 and US Cl.: 370/203,208

Applicant

WALTICAL SOLUTIONS, INC. (FORMERLY WALBELL TECHNOLOGIES, INC.)

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

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Form PCT/ISA/237 (cover sheet) (January 2004)

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/04601

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No. .  
PCT/US05/04601

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-21	YES
	Claims NONE	NO
Inventive step (IS)	Claims 1-21	YES
	Claims NONE	NO
Industrial applicability (IA)	Claims 1-21	YES
	Claims NONE	NO

2. Citations and explanations:

Claims 1 - 7 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest that a receiver configured to receive adjusted data signals and associated control information transmitted by a signal transmitter, wherein:  
adaptation processes of a transmitter adjust at least one signal attributes selected from the group of modulation scheme, coding rates, pilot patterns, training symbols, power levels, spatial processing schemes, modulation constellation arrangements, transmitter antenna techniques, and sub-channel configurations;

the control information includes an indicator that refers to a specific set of adaptation processes known to both the receiver and the transmitter;

a receiver which adapts and configured to receive adjusted data signal and associated information that is processed by a transmitter;

measure channel conditions based on the received signals;  
compute CQI based on measured channel conditions, for use by the adaptation processes to determine schemes for transmission of subsequent signals and associated control information; and ....

Claims 8-12 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest that a transmitter adapt and transmit signals on a multiple sub-channels, wherein a modulation scheme, coding rates, training pilots, and power levels of the signals are all adjusted by adaptations processes that respond to transmission channel quality information (CQI) ....

Claims 13-16 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest that a multi-carrier communication system with multiple transmitter which is configure to transmit the modification information, which includes modification of modulation schemes, coding specifics, training pilots, and power levels, is transmitted by an index value that identifies an explicit set of modulations known to the transmitters and to the receiver.

Claims 17-21 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest that a means for adjusting at least one signal attributes selected from the group of modulation scheme, coding rates, pilots patterns, training symbols, power levels, spatial processing schemes, modulation constellation arrangements, at each transmission period, based on transmission channel condition information sent back by a receiver means of prior signals.